

CLAIMS

1. A *Streptococcus pneumoniae* bacterium in which expression of one or more of the following genes has been knocked out: SP0005, SP0032, SP0047, SP0056, SP0092, SP0102, SP0103, SP0253, SP0261, SP0289, SP0290, SP0292, SP0336, SP0337, SP0381, SP0382, SP0383, 5 SP0397, SP0402, SP0417, SP0418, SP0419, SP0420, SP0423, SP0424, SP0425, SP0477, SP0516, SP0529, SP0605, SP0655, SP0656, SP0669, SP0680, SP0689, SP0708, SP0756, SP0757, SP0762, SP0806, SP0839, SP0865, SP0876, SP0935, SP0944, SP0945, SP0969, SP0974, SP0988, SP1067, SP1079, SP1084, SP1117, SP1128, SP1161, SP1263, SP1267, SP1268, SP1269, SP1271, SP1272, SP1273, SP1329, SP1360, SP1366, SP1367, SP1390, 10 SP1420, SP1456, SP1458, SP1492, SP1521, SP1529, SP1530, SP1534, SP1559, SP1571, SP1589, SP1610, SP1649, SP1650, SP1655, SP1667, SP1670, SP1690, SP1698, SP1699, SP1709, SP1726, SP1735, SP1814, SP1881, SP1906, SP1907, SP1968, SP1975, SP2012, SP2047, SP2051, SP2146, and/or SP2216, wherein the SP_n nomenclature refers to the gene numbering assigned to the *S.pneumoniae* TIGR4 strain in Tettelin *et al.* (2001) *Science* 15 293:498-506.
2. The bacterium of claim 1, wherein expression is knocked out by isogenic deletion of the coding region of said gene(s).
3. The bacterium of claim 1 or claim 2, wherein the bacterium contains a marker gene in place of the knocked out gene.
- 20 4. A process for determining whether a test compound down-regulates expression of a target polypeptide, comprising the steps of: (a) contacting the test compound with a *S.pneumoniae* bacterium of any one of claims 1 to 3, to form a mixture; (b) incubating the mixture to allow the compound and the bacterium to interact; and (c) determining whether expression of the target polypeptide is down-regulated, wherein the target polypeptide is selected from the group consisting of SP0005, SP0032, SP0047, SP0056, SP0092, SP0102, SP0103, SP0253, SP0261, SP0289, SP0290, SP0292, SP0336, SP0337, SP0381, SP0382, SP0383, SP0397, SP0402, SP0417, SP0418, SP0419, SP0420, SP0423, SP0424, SP0425, SP0477, SP0516, SP0529, SP0605, SP0655, SP0656, SP0669, SP0680, SP0689, SP0708, SP0756, SP0757, SP0762, SP0806, SP0839, SP0865, SP0876, SP0935, SP0944, SP0945, SP0969, SP0974, SP0988, 25 SP1067, SP1079, SP1084, SP1117, SP1128, SP1161, SP1263, SP1267, SP1268, SP1269, SP1271, SP1272, SP1273, SP1329, SP1360, SP1366, SP1367, SP1390, SP1420, SP1456, SP1458, SP1492, SP1521, SP1529, SP1530, SP1534, SP1559, SP1571, SP1589, SP1610, SP1649, SP1650, SP1655, SP1667, SP1670, SP1690, SP1698, SP1699, SP1709, SP1726, 30 SP1735, SP1814, SP1881, SP1906, SP1907, SP1968, SP1975, SP2012, SP2047, SP2051, SP2146, and/or SP2216, wherein the SP_n nomenclature refers to the gene numbering assigned to the *S.pneumoniae* TIGR4 strain in Tettelin *et al.* (2001) *Science* 293:498-506.

5. A process for determining whether a test compound binds to a target polypeptide, comprising the steps of: (a) contacting the test compound with the target polypeptide to form a mixture; (b) incubating the mixture to allow the compound and the target polypeptide to interact; and (c) determining whether the compound and polypeptide interact, wherein the target polypeptide is selected from the group consisting of SP0005, SP0032, SP0047, SP0056, SP0092, SP0102, SP0103, SP0253, SP0261, SP0289, SP0290, SP0292, SP0336, SP0337, SP0381, SP0382, SP0383, SP0397, SP0402, SP0417, SP0418, SP0419, SP0420, SP0423, SP0424, SP0425, SP0477, SP0516, SP0529, SP0605, SP0655, SP0656, SP0669, SP0680, SP0689, SP0708, SP0756, SP0757, SP0762, SP0806, SP0839, SP0865, SP0876, SP0935, SP0944, SP0945, SP0969, SP0974, SP0988, SP1067, SP1079, SP1084, SP1117, SP1128, SP1161, SP1263, SP1267, SP1268, SP1269, SP1271, SP1272, SP1273, SP1329, SP1360, SP1366, SP1367, SP1390, SP1420, SP1456, SP1458, SP1492, SP1521, SP1529, SP1530, SP1534, SP1559, SP1571, SP1589, SP1610, SP1649, SP1650, SP1655, SP1667, SP1670, SP1690, SP1698, SP1699, SP1709, SP1726, SP1735, SP1814, SP1881, SP1906, SP1907, SP1968, SP1975, SP2012, SP2047, SP2051, SP2146, and/or SP2216, wherein the SP n nnnn nomenclature refers to the gene numbering assigned to the *S.pneumoniae* TIGR4 strain in Tettelin *et al.* (2001) *Science* 293:498-506.

10. The process of claim 4 or claim 5, wherein the test compound comprises a peptoid, a lipid, a nucleotide, a nucleoside, a small organic molecule with a molecular weight between 50 and 2500 Da, an antibiotics, a polyamine, a polymer, or a peptide.

15. A compound obtainable by the process of any one of claims 4 to 6.